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TONING SILVER PRINTS AFTER FIXING.

At a recent meeting of the Photographic Society of Philadelphia, a member showed a number of silver albumen prints, which were of a soft brown warm tone and quite rich in appearance. The method employed consists in toning the prints after fixing, instead of the usual plan.

They are printed deeper than usual, and immediately on removal from the frames, without any washing whatever, are placed in the hypo solution of ordinary strength, where they assume an ugly foxy red color; but by subjecting them to a toning bath of gold mixed in the usual way, but somewhat stronger and without the alkali, they gradually acquire the rich warm brown color, and if the toning operation be carried still further, purple and black tones may be secured.

It was found that better results were had when the paper employed was only thinly albumenized. A strong nitrate of silver bath also gave richer results than when the paper was floated on a weak solution.

The doubly albumenized papers did not give good results at all.

We call attention to the process, not on account of its value, though interesting, but because it calls to mind a method which we hear sometimes well spoken of by the older photographers, of toning and fixing in the same bath, and the question has been asked whether it would advantage to revive the process.

Undoubtedly the prints of those by-gone days were beautiful, having those soft brown tones which are no longer the fashion, and, to judge by the appearance of some specimens we have seen, which have escaped the ravages of time, have a good claim to permanency.

The formula was to take 8 ounces of hyposulphite and dissolve it in 16 ounces of water; then 20 grains of chloride of gold dissolved in two ounces of water.

The gold was added to the hypo in small quantities at a time with constant stirring: next, a solution of 2 drachms of silver nitrate in 2 ounces of water was added in a like manner. After standing for several hours, the solution, when filtered, was ready for use.

The prints were taken from the frames and, without washing, as in the experiment above, placed in the bath, where they acquired the foxy red color, which gradually changed to brown, purple and black. The toning was slow and tedious, and frequently required hours for completion.

The prints were afterwards washed as usual. The bath was seldom made up fresh, but added to from time to time.

It is probable that the sulphur, liberated by the acidity of the bath, effected the black tones.

It was necessary to print much deeper than we do now-a-days, and we believe the silver bath in those days was considerably stronger than it is now. This agrees with the experience of the gentlemen referred to. The albumen coating on the paper was also not as concentrated as the samples now employed. This also agrees.

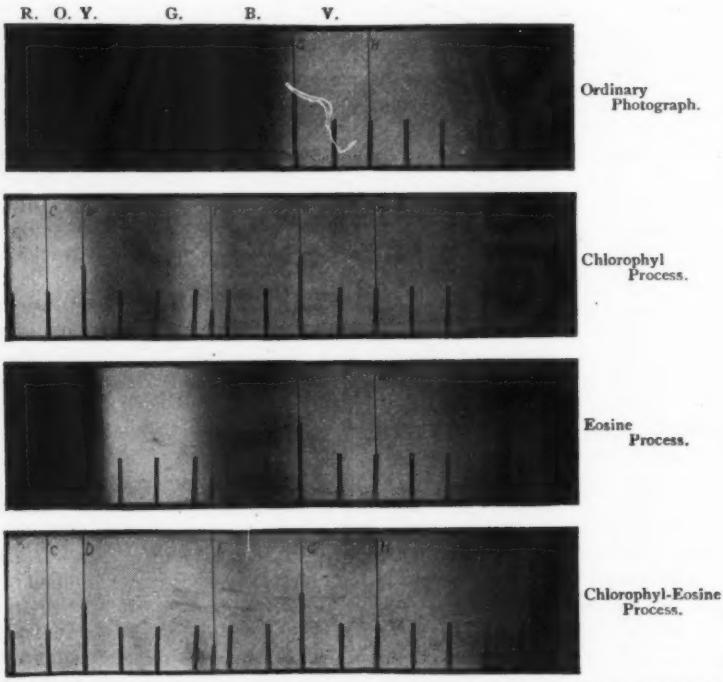
It is therefore not likely that photogra-

phers will revert either to the old method or adopt the plan to which we have called attention. The reasons are obvious: the latter might, however, be useful in an emergency, if, by any mishap, the prints should be improperly toned, in order to give them a better color, and is therefore worth remembering.

(Read at the Meeting of the Franklin Institute, May, 1886.)

COLOR-SENSITIVE PHOTOGRAPHIC PLATES.

BY FRED. E. IVES.



[The negatives were too intense for accurate process reproduction; the relative intensity in red and yellow-green is much greater than the illustration shows.]

The subject of color-sensitive photographic plates has received a great deal of attention during the past year or two, but there has been and is still a great diversity of opinion in regard to the capabilities of the various color-sensitizers. In illustration of this fact, I will mention that Becquerel, who first tried chlorophyl, stated that with it he made plates from one-fifth to one-tenth as sensitive to the red of the spectrum as to the blue or violet; Dr. Vogel estimated that eosine-stained plates were eight times more sensitive to the yellow green of the spectrum than to the blue; I myself stated that plates stained with myrtle-chlorophyl, according to my published method, required even less exposure through a yellow glass than eosine plates. Capt. Abney stated that, according to his experience, stained plates were always many times more sensitive to blue and violet than to any other color, and many persons have believed that the color sensitizers acted more by reducing the blue and violet sensitiveness than by actually increasing the sensitiveness to other colors.

For the purpose of proving the capabilities of chlorophyl and eosine, I have made four photographs of the lime-light spectrum, one on a plain emulsion plate, one

on a chlorophyl-stained plate, one on an eosine-stained plate, and one on a plate stained with both chlorophyl and eosine. The spectrum was projected by means of an optical lantern, and a flint glass prism, with a slit measuring one-fifth of an inch. It will be understood that the different colors have not exactly the same relative intensity in the spectrum that they have in the solar spectrum, but the difference is insignificant. Short wires were placed so as to cast shadows on the sensitive plate, to aid in the comparison of results; some of these wires, which I have marked, occupy the position of Fraunhofer lines in the solar spectrum. All plates were prepared with the same collodion bromide emulsion, and received the same exposure and development.

The plain emulsion plate shows very little action, except in the blue, violet and ultra-violet; the maximum of sensitiveness is in the middle of the violet. (It should be noted here that with gelatine bromide dry plates, the maximum of sensitiveness is in the indigo blue, about *G*, and they are also relatively more sensitive to green and yellow.)

The chlorophyl plate shows a very strong action all through the visible spectrum, strongest in the red, orange and dark green; weaker in the blue and violet, and weakest in the yellow green. In the red, below *C*, the plate shows about five times as much sensitiveness as in any part of the violet; in the orange-red, twice as much; in the yellow-green, one-half as much; and in the dark-green, one and one-half times as much. The violet sensitiveness appears to be slightly reduced near *H*. This experiment proves that my chlorophyl plates are remarkably sensitive to all colors, as I have many times asserted that they were, and that they are twenty-five to fifty times more color-sensitive than those which Becquerel employed in his experiments. They are probably 400 or 500 times more sensitive to red than the same collodion emulsion plates without chlorophyl.

The eosine plate shows no action in the red and orange, very little in the yellow, a great deal in the yellow-green, and considerable in the dark-green. The action of eosine is strongest exactly when the action of chlorophyl is weakest; it gives about the same degree of sensitiveness to yellow-green that chlorophyl gives to red, but in a broader band. The violet sensitiveness appears to be exactly the same as in an unstained plate.

The chlorophyl-eosine plate shows by far the most remarkable result of all. Neither sensitizer appears to have retarded the action of the other, but rather to have aided it, so that *the weakest portion of this photograph below B is stronger than the strongest portion in the blue and violet!* Nearly a year ago I recommended that chlorophyl and eosine be used together in practical isochromatic photography, and this experiment proves that the combination possesses the advantages which I claimed for it.

I have found that in order to secure the best results with the chlorophyl-eosine process, fresh, strong blue myrtle chlorophyl solution must be used, and the amount of eosine must be strictly limited; otherwise, the plate will not be so sensitive to yellow and to blue-green. I now prefer to apply the eosine by simply tinting with it water in which the plate is to be washed after applying a plain solution of chlorophyl. I have an over-exposed negative of a bright chromo card which I made on one of these chlorophyl-eosine plates, with an exposure of one minute in the light of a coal oil lamp, having a single small argand burner and nickel reflector. No color screen was used, but owing to the yellowness of the coal oil flame, all the colors have photographed correctly.

A plate prepared with the same emulsion without chlorophyl, with same exposure and development, showed only the high lights of the picture very faintly.

STILL LIFE PHOTOGRAPHY.

BY JOHN BARTLETT.

The power of invention is generally denied the photographer. He must, we are told, take things just as he finds them. His pictures are actual transcripts from nature, nothing else, unmodified by any touch of his own. Therefore, what claim has he to

be accounted an artist? All that can be accorded him is a certain amount of selective ability in securing the best possible under the circumstances. The discordant elements which accident often introduces to mar the lovely scenes of nature, and which the artist may easily exclude, and preserve the harmony of the view, at best can only be modified by the photographer, very often not to his entire satisfaction.

Now, while we are sure there are many photographic landscapes, which are perfect in artistic beauty, yet we must confess that the unsightly objects which man, and sometimes nature herself obtrude, make us wish that the sensitive film had the power of rejecting what is out of harmony with the view.

There is, however, one branch of photography in which the inventive faculty may have considerable scope; which, to borrow a term from painting, we may call "Still Life Photography." Here the material is directly under control; here is room enough for the exercise of taste in composition; here one is not limited to mere selection of the best possible, but the artistic feeling may combine and contrast and rearrange until the very idea the mind has may be embodied in an actual picture.

Broadly considered, still life may be made to include a variety of subjects; the groupings of flowers and fruit; the arrangement of vases, urns, bronzes, statuary, bric-a-brac and musical instruments, as well as the representation of domestic scenes and incidents of every day life.

It is surprising what pleasing results can be secured by the employment of just such articles as are in every day use.

The fireplace with the wood and the coal scuttle, and the tongs, and the dust brush and pan, is common-place enough, but what a charming little picture can be made by grouping about it these simple things in their proper relation to one another, and if we have puss dozing on guard we give an extra touch of domestic interest to the picture.

It is impossible to give any direct rules for arrangement to produce a pleasing effect. At first we shall have some difficulty in grouping to our taste, but it is surprising how soon the faculty is developed of seeing the different things in their relation to one another. It seems almost as if they had a previous connection, and we were merely bringing them together again. Different parts of the most diverse things will fit in and adapt themselves to one another, and become helps to pictorial effect rather than the hindrances we at first supposed them to be.

I imagine it is just like rhyme and metre are to the poet—in the beginning obstructions to the freedom of his thought, but as he progresses the pleasant channels into which his ideas easily flow.

Composition is making one thing out of several things. A book or poem is only made up of words arranged in a certain way, but it is the arrangement which gives it value as a work of genius, and so a photograph or painting is an arrangement of forms and shades; but it is the manner in which they are grouped and contrasted which gives it claim to being called artistic.

There is no design in a load of stones dumped out of the cart; it is only when the stones are set in appropriate form and manner in the beautiful edifice that we see the idea of the architect gradually unfold.

And so in the still life picture a haphazard bringing together of all sorts of things is not picture making. We must study the relation of parts and the general harmony of the whole.

One fault we are apt to fall into at the beginning is the idea that we should have a symmetric balance; that the centre figure should be relieved by having figures of one height on either side.

Such an arrangement is monotonous and unpleasant. There should be a balance, but it should be a balance of the masses.

We must always look on our group as a picture, and try to secure a broad massing of the lights and shades.

There must be a principal light and a principal dark, and a gradation in each.

We must remember that the light upon objects can be subdued by placing them in the shadow of other objects. A dark thing is relieved and brought out more prominently by placing it before a light one as

a background, and so we can set off a light thing before a dark background. Glass, for instance, should always be placed before something dark to show its peculiar quality.

Another fault we are apt to fall into is over-crowding our picture. Too much detail detracts from the general interest. It is best to express our ideas in the fewest possible terms, consistent with clearness, in writing as well as in photography.

Concerning the choice of a subject, it is impossible to give anything but suggestion.

A line or two from the poets will frequently give us subjects to work upon. Keats, in his "Eve of St. Agnes," furnishes a beautiful picture of a table set with good things, and in the well-known lines—

"Gather the rosebuds while ye may,
Old Time is still a-flying;
And these same flowers which smile to-day,
To-morrow will be dying"—

could we not represent the idea by placing upon a table a bunch of flowers, either in a vase or lying as if just gathered, and an hour glass and sickle to represent time, and perhaps an old worn book.

I think such a photograph would make a good picture, quite as suggestive, if not more so, than a painting by one of the Dutch masters, which I remember seeing, representing a young girl lying sick in bed, and the attendant physician seeking to determine the cause of her malady, while a little picture of cupid above the head board, with a sly expression on his face, seems to be trying to give the hint that the affection is heart trouble.

Concerning the background to be employed we can merely say it should be appropriate, leaving the selection to your taste and judgment.

A plain quiet background into which the objects blend softly, is effective; but frequently beautifully arranged drapery in graceful folds adds much to the charms of the picture.

In the arrangement of the light it is hardly necessary to say, avoid violent reflections from polished surfaces, nor need we caution you against the false taste of stopping out the background of the negative with opaque color. If the background has radical defects, reject the negative at once. The harsh outline of the objects against the light background, no matter how skillfully done, is unpleasant, and even if you should print in another background, the figures lack that soft blending into it which is so agreeable in a picture.

The use of a very small stop to secure excessive sharpness is not advisable, the foreground should be full of detail, but the more distant objects in the group will be improved in softness if they do not cut sharp against the background. Use, therefore, a moderate sized stop only. In nature we can hardly say there is outline. It is, in truth, only shade on shade.

In conclusion, let us say that the study in the grouping of still life subjects is the best school for training our eye to the selection of artistic landscapes. The practice it gives will enable us to quicker determine the relation of parts in securing pictorial effect.

CHLORIDE OF GOLD.

By WILLIAM BELL, Lehigh University.

Take—

Nitric Acid.	2 drachms.
Muriatic Acid . . .	8 drachms.
One gold dollar.	

Dissolve and evaporate to dryness, being careful not to overheat (if overheated, the acid will be driven off and metallic gold deposited, necessitating re-dissolving in above acids and evaporating). Dissolve the product in 25 ounces water, adding 1 ounce of acetate of soda; the solution will contain 2 grs. chloride of gold to the ounce. The above amount will tone from fifty to sixty sheets of paper. In toning, take—

Above solution	1 oz.
Water	10 oz.

Add bicarbonate of soda until solution feels slippery to the fingers. Prints should be toned until the red color just disappears for warm tints, but for blue black tones it should be carried further.

This bath can be used for several days, adding to the bath chloride gold solution at the rate of 1 grain to the sheet of albumen paper. The writer prefers making up a

new bath for daily use. The saving of the gold in used baths can be done by protosulphate of iron precipitation, but is a rather long process. I give a method I employ. Put the gold bath in an evaporator and evaporate to dryness; the gold in the bath will be converted into a blue black deposit. Now cover this deposit with water, pour this into a funnel with filter paper to catch deposit, fill up filter several times with water to wash away the alkali used in toning; when well washed dissolve deposit in filter (paper and deposit) in above proportion of acids in which the original dollar was dissolved, filter and evaporate to dryness as per directions.

Reminiscences of Travel of an "Old-Time" Amateur.

(Continued from May Number.)

To the Editor of the American Journal of Photography.

DEAR SIR:

I spoke in my last letter of a pleasant visit that I paid to Mr. W. J. Stillman, in the Isle of Wight. I may briefly run over some of the many useful and interesting things I saw and learned there. First, about alkaline development; and although some might look askance at these principles as those for the collodion film, yet, on the whole, I think that they are equally applicable to the modern gelatine plate, if we bear in mind that a larger amount of ammonia will be required by the thick tough gelatine film. Mr. Stillman directed my attention to the fact that any amount of intensity of image could easily be obtained (on collodio-bromide plates) by adding the restrainer in the form of bromide freely after the detail was well out, and then adding a proportionate quantity of pyro. He also kept the pyro dry in its bottle—not in solution—thus being sure of always having it in its most active condition. I think it would save vexation and loss if the operators now were to follow this plan instead of attempting to make up large quantities of stock pyro developers. I must not forget to mention that he also gave me a sample of the since much used "blue" paper (all this was in the summer of 1875), and a bottle of washed collodion emulsion which I used successfully afterwards. I remember the shock my photographic nerves received when I saw him stand the coated plates up to dry on chairs around the room; nevertheless, the emulsion in his hands gave very good results. He used the Ross Symmetrical and Morrison lenses.

The cathedral town of Salisbury was the spot where I next unpacked my camera. Having a Zentmayer lens belonging to my friend, Mr. John C. Browne, with me, I had no difficulty in including the whole tower and spire for which Salisbury Cathedral is so justly famous. It was one of the very few cases where I have been driven to the use of a wide-angle lens, but nothing here could have been done without some such instrument, for in spite of the handsome "close" around the building, the 500 feet of spire could not have been taken with a lens of ordinary angle. I had a long afternoon's work with wet collodion here; and had pitched my dark tent in the road just outside the grass sward. While I was developing my fourth plate, I heard horses going by, evidently frightened at the tent, and the voice of the driver trying to quiet them. As bad luck would have it, they were the Dean's horses bringing him home from a ride. In a few minutes a message was sent to me to remove "that thing" from the road. But I had my good fortune as well; for the constable of the close had meantime been talking to my assistant, and now knew who and what I was. This good man was most indignant at the curt and peremptory message that had been sent to me, and immediately invited me to come inside the "close," assuring me that I could there work undisturbed as long as I pleased, adding some very complimentary remarks about my work and his pride that the Cathedral should be "taken" by an American. It need hardly be said that I accepted the invitation, and neither on that day nor afterwards did I hear any more from the crusty Dean.

Those familiar with the geography of "Old England," will remember that the celebrated pile of stones called "Stone-

henge" is situated on Salisbury Plain, a few miles from the town. Salisbury Plain, moreover, is immortalized in that most charming of books, "Ingoldsby Legends," which I will recommend to those of your readers who are fond of wit and humor of the most genial kind. I kept constantly repeating the lines

> "Oh! Salisbury plain is bleak and bare,
> At least, so I've heard many people declare," etc.,

on my way out to the pile. Here I found a crowd of tourists making merry with their lunches and their fair damsels; nevertheless, I exposed a Liverpool plate and secured a good negative. In the course of some other rides in the vicinity of Salisbury I picked up several interesting "bits," all on the same "Liverpool Plates." A short trip through Devonshire gave me as subjects the Cathedral at Exeter, and some rock studies at Ilfracombe on the North Coast.

Constant bad weather and rapid traveling prevented my getting anything more until we reached Bettors-y-Coed, in Wales—a spot celebrated among English artists much as North Conway in our White Mountain district is with us. Here I might have done well had it not been for the *incessant rain and wind*. But I had also to struggle with a bath that had been overworked, and was showing signs of fog. I made up a new one at once, but the water being bad, it was a failure. However, what with care and the Liverpool plates, I succeeded in getting about all that the infamous weather would permit. On turning to my note book, I find the following entry for work at the Old Stone Bridge—a celebrated and beautiful subject. I need scarcely say that the words "*aids* to work" are ironical:

Aug. 17th.—Aids to Work:

1. Unreliable bath.
2. Broken dipper.
3. Meddlesome children.
4. People getting in the way.
5. Dogs (fierce) trying to get into the tent.
6. Other photographers looking on and criticising everything.
7. Clothes hung out to dry all over the ground, and obscuring many of the best views.

In spite of all, I got tolerably fair results; and I just recollect that I met a young amateur who was working Kennett's gelatino-pellicle plates on a small camera. He had been quite unable to develop a picture to his satisfaction, and asked me to try it for him. I gladly did so; but from what I have since seen, I fancy the gelatine emulsion in this case had not been "hardened;" for, although the image came out well, something else—namely, a big blister—came out in the middle of the plate, and by the time development had finished, the film was off the glass and floating in the sink! Now that hundreds of plates are developed successfully every day, we can truly say with the French, *nous avons change tout cela*.

I said in my last letter that health, not photography, was the object that took us abroad. I had the singular luck of crossing the Atlantic for four years in succession on this very errand. Therefore, without wasting space in a description of the ocean voyages, let me, Mr. Editor, ask your readers to imagine that since the work in Wales just described, they have been back with me to America, spent the winter, and crossed the Atlantic again in June of the following year. We stopped a few days only in London, during which time I bought a 7-inch Ross Portable Symmetrical Lens, which works admirably on a 6½x8½ inch plate. In fact, one of my friends once made a very good interior view of a small room with this lense on a plate no less than 10x8 inches. I consider this lense a wonderful instrument in all respects.

My outfit for the second trip was in many respects the same as for the year before. But, just as I was on the point of sailing, I saw in one of the English journals an account of a young man who, being about to start for India from England with his photo outfit, applied to the steamer company for permission to take his chemicals (which in those days necessarily included collodion) with him. Permission was refused, since the chemicals included inflammable articles. The man was determined to take them, nevertheless, so he had them packed

in a zinc-lined box by a dealer in London, and shipped them to Southampton (where he was to embark) by rail. Unfortunately, the box contained among other things a large bottle of nitric acid. This got broken, and acting on the zinc lining of the box, generated heat enough to burst the bottles of collodion and even to set them *on fire!* It need hardly be said that when he went to claim the box at Southampton, he was instantly arrested for the attempt to carry "dangerous chemicals," lost his passage, and was heavily fined.

Now, as I myself was carrying much the same kind of goods, this article in the journal made such an impression upon me that I immediately wrote to the agents of the Cunard Line (by which we were to sail) in New York, explaining in full how I packed my chemicals and why I took them. We received by return mail a most courteous letter, stating that they had no objection to my taking the collodion, "provided that it was safely packed." I may describe my method of packing in a future letter, but *this* time I took the basket containing all the articles, and, after packing, threw it violently on the floor, and then kicked it across the room. When I opened it after this rough treatment, I was pleased to find everything intact. So, putting the basket right in the middle of my trunk, with soft clothes all around it, you will not be surprised that when I opened it for the first time in Switzerland, nothing was disordered in the slightest degree after many thousand miles of travel.

I did a little dry plate work in Brussels, and after that at a charming spot on the shores of the Lake of Geneva. Going on up the valley of the Rhone, we finally halted at the quaint little town of Brieg, near the foot of the Simplon Pass. I shall never forget the delight of my first day's *wet* work here on the continent of Europe. There had been heavy rains for some time before; but I had come just in the "nick of time," for the morning after my arrival, the air was perfectly radiant with clear, full sun, the colors of the mountains and fields fresh and green, and the glorious snow-peaks seeming to invite one to photograph them. I lost no time in pitching my tent and getting to work, and on that day and the two following, I made some capital negatives of the beautiful scenery in the vicinity. I had learned from previous experience to be careful of the water, so I always used rain or distilled water for the developer, and would also give the finished negative a wash of distilled water at the last, so that the lime salts and other impurities might not remain in the film, and so spoil the varnish. By a little care in this respect I had no trouble, and it is a point well worthy of being remembered when working in countries where the quality of the water is open to suspicion.

I must admit that the old-fashioned dry plates broke down badly on such difficult subjects as the Rhone Glacier, but I consoled myself with more *wet* work at Hospenthal, farther on, and got also some studies of the curious old timbered houses in the villages, which now indeed serve as models for the fancy residences of our wealthy families; the architects in many cases rightly preferring to copy, rather than go to the trouble of making fresh designs.

Very truly yours,
ELLERSLIE WALLACE.

FLOATING FILMS.

BY ROBERT GRIFFITH,
Frankford.

The malady of frill to which the primitive gelatine plates were so prone, is thanks to the skill of the maker of modern brands of less frequent occurrence. The slight puckering up which sometimes does appear, especially round the edges of the plates when we are careless in touching the surface with our warm hands, or when we have the temperature of our dark-room too high, is easily under control by a judicious use of alum; but we lately encountered a state of things quite as serious, as frilling the complete or partial floating of the film from the glass.

In vain we have recourse to alum; the remedy is worse than the disease. It is too energetic in its action, even in a dilute condition.

It puckers up the delicate skin in knots,

and wrinkles, so that our fair but frail negative looks more like the collapsed wing of a bat than the beautiful transcript of nature we had hopes of producing.

Fortunately, I remembered reading, in the *British Journal of Photography*, of the experience of one who had similar trouble. Like all good things we hear of, we remember the fact, but forget the authority, so we cannot give the writer's name. However, we are thankful to the unknown for his suggestion, by which we rescued our negatives from an ignominious passage down the drain.

Alcohol is, as every one knows, a hardner of animal tissue; and as gelatine is an animal product, its use is at once suggested, but it is the mode of application which is of special importance. By its judicious use we may coax back the erring film which is prone to wander.

But we must be careful not to use the alcohol too strong at first. Place the plate in a dish upon a perfectly level table, and cover it with clear water and keep it as still as you can.

Pour carefully into the dish a little alcohol, so that the hardening action may go on very gradually. You will notice in a short time a diminution in the area of the film, gently guide it back to its position on the plate by means of a camel's hair pencil, increasing the amount of alcohol from time to time until it has reached its original size, when an extra dose of strong alcohol will completely harden it and cause it to dry rapidly.

It is better to substitute a glass a trifle larger than the original, as the film will not always return to its exact dimensions. This is of no consequence in landscape work, as a slight extension will not be noticed; but in portraiture worry with the film until you get it back exactly, or you will be sorry when you hear the remarks of the fair original. The slightest deviation in the length or breadth of a face will cause much exageration and distortion.

The softening of the gelatine and floating from the plate may be prevented, as experience has taught me, by the exercise of a little care.

The trouble seems generally to show itself at the first washing after removal from the hypo, especially if the latter solution is pretty strong. It seems to be the sudden change of temperature to which the plate is subjected which affects it.

It is therefore best to have the solutions nearly uniform in temperature, even the transition to a colder medium is likely to cause trouble of frill.

Our amateur dark rooms are not generally built so as to secure a good circulation of air, and when we are compelled to employ artificial light the evil is greatly increased. A gas jet especially gives out for its size an enormous amount of heat, and if we must use gas, some means should be devised to carry off the hot air, which might be utilized to create a current for ventilation.

When the dark room connects with another room by means of a window, you can place the gas in an adjoining room and fix screens before the connecting sash.

But daylight filtered through ruby and yellow glass or fabrics is the best illumination we have at present. We are in hopes that the experiments of Captain Abney and others who are seeking a comfortable light for us to work by, will be attended with success.

SOCIETY SIFTINGS.

The reports of the minutes of the various foreign Societies show that a lively interest is being taken in photography. Many important papers have been presented, and the discussions which followed upon these papers, as well as upon other subjects, seem to point to the advent of a period of activity which will undoubtedly result in much good.

Recently Mr. Charles Poirson brought to the notice of the South London Society his investigation of the Photographic Properties of Phosphorus. The author briefly reviewed the history of the discovery of phosphorus, mentioned its peculiar physical and chemical features, and showed its action to the influence of light and its value as a photographic agent. We are sorry we have not space to give this important paper in full, and shall have to content ourselves with a condensed account of the method

employed to secure a phosphorus photograph.

Pure phosporus, as is well known, is of a yellow-white color, and almost transparent, melting at 44° Cent., and having a powerful affinity for oxygen.

Exposed to light, either in water in which it is kept, or to the air, it undergoes a most important change from its yellowish appearance—it gradually assumes a tint, growing deeper and deeper, until it reaches that of a red brick color.

Phosphorus, unaffected by the light, is soluable in various menstrua, among which is sulphide of carbon; but after it has assumed the red condition by the action of light, it is rendered insoluable, hence we can readily see its value as a photographic agent.

The author shows that it is as manageable as silver for producing prints from negatives, and that it is also readily fixed and toned. The same solvent which rapidly dissolves the unaltered phosphorus, is perfectly inert in its action upon the red variety. Mr. Poirson employs the sulphide of carbon as the solvent.

Pure phosphorus is obtained and dissolved in the sulphide of carbon, and poured like collodion upon a stone of fine grain. The evaporation being very rapid, the stone is soon ready to use for contact printing with an ordinary negative.

The time of exposure is 20 to 30 minutes in the sun, and in the shade 2 or 3 hours are required to obtain the same results.

The shadows in the print are represented in red, the high lights in pale yellow.

The fixing is effected by placing the print in a solution of sulphide of carbon, diluted with an equal quantity of turpentine.

The action of the sulphide of carbon alone is too rapid. The stone is placed in a dish, face downward. Fixing occupies from 5 to 10 minutes.

The toning must not be done until the fixing is complete, otherwise fog will arise.

Nitrate of silver may be used as a toning agent. A weak solution of this body has a most rapid action upon red phosphorus, changing it immediately into a black substance. A brush may be used to spread the solution. Sulphate of copper is another chemical which will tone readily, giving a brown tint. Chloride of copper gives a still deeper brown color.

The most important part of the communication is the application of the process to photo-lithography. The pure phosphorus taking the ink, the red refusing it. Mr. Poirson has reason to believe that the results he has produced in securing half tints, if not perfect, are capable of improvement.

Captain Abney read before the Photographic Society of Great Britain a paper in which he treated scientifically the subject of the best light for the dark-room.

By the application of a shadow test to the measurement of the light of the different parts of the spectrum, he comes to the conclusion that red is preferable to yellow for the illumination of the dark-room.

The paper caused a lively discussion.

Mr. Debenham, among others, believed that, practically, yellow or yellow-orange glass afforded more light to work by, in proportion to its effect upon the plate, than red light.

Dr. Mallman has been making some important addition to our knowledge of ortho-chromatic photography. He has succeeded in reducing very materially the time of exposure by lamp light, and has escaped the invasion of fog, the great enemy of the ortho-chromatic plate. At a meeting of the Photographic Society he exhibited a number of portraits, taken on gelatine bromide plates, sensitized in a bath of erythrosin, which is a tetra-iodo-fluorescine.

His method of sensitizing consists in dipping any gelatine plate, not containing more than one per cent. of iodide of silver, in the following preliminary bath:

Ammonia	2 parts
Distilled water	200 parts

The plate is then transferred to the following solution:

Erythrosin (1:1000 of water) .	25 parts
Distilled water	175 "
Ammonia	4 "

The plates are then dried in total darkness. The above operations, however, are carried on under a deep red light, and not too much of it.

The general and relative sensitiveness

for the yellow rays is extraordinarily increased, about twenty-five times greater than unstained plates to the light of a coal oil lamp.

The investigations of Dr. Mallman will be received with general interest both on account of their practical value in studio work, in taking portraits by gas or lamp light, and in copying paintings, as well as from the fact that any ordinary trade gelatine bromide plate may be converted into an orthochromatic one.

Hitherto there have been few if any processes for permanent printing which render with any approach to truth the delicate modelling of the lights and shades of a picture, but we learn that Mr. E. W. Foxlee has produced some remarkable specimen by a new method, which we understand is an etching process. The artist may therefore take hope in the belief that ere long he shall rejoice in the correct translation of his most delicate touches.

In development, the tripod has lagged far behind the advance of cameras. To be guilty of a bull, the march of tripods is at a stand-still.

Would they were at a stand-still.

Stability is the last thing thought of in their make up. Convenience for carrying is all. Steadfastness is no quality in their disposition, nor do their makers ever think of the great responsibility they thrust upon those three feeble limbs in bearing up the weight imposed upon them; but we can hope for something better soon. At one of the meetings of the Manchester Society Mr. Watt exhibited a tripod constructed of corrugated brass, which can be shut up to the compass of an ordinary walking stick. It weighs but one pound, yet, we are told, it is capable of supporting a camera of over fifty pounds weight.

The Photographic Society of Philadelphia.

A stated meeting of the Society was held Wednesday evening, June 2d, 1886, with the President, Mr. Frederic Graff, in the chair.

It was announced that the judges of the late exhibition had selected from the work of members shown at that time the two presentation pictures for the current year. One was by Mr. Robert S. Redfield, entitled "By Quiet Waters," and the other by Mr. Frank G. Cauffmann, called "May Days."

A question in the box asked: "What is the exact meaning of flatness of field (applied to lenses)?

Flatness of field was described as the quality in a lens of sharply defining the extreme edges and the centre of a plate when using a large stop and focussing on objects all in one plane, that plane being at right angles to the axis of the lens; as, for instance, a piece of printed matter or a picture on a flat surface as arranged for copying.

Mr. Wood, referring to a matter under discussion at the last meeting, asked whether it would not answer as well to put a plate in the alum bath after, instead of before fixing; his idea of the object of the alum being to toughen the film and prepare it for long washing. It was answered that this would do as well if the alum was only needed for its clearing action of the plate, but if the film had a tendency to soften or frill, the alum was needed before fixing to counteract this tendency, which generally showed itself in the fixing bath.

Mr. Eckfeldt asked the cause of mottled markings on a plate, having the appearance of snakes. The markings showed themselves on the plate in question after fixing. Another plate of the same lot, developed and fixed in the same solution, being free from them. It was thought they were occasioned by the plate remaining quiet in the bath during fixation, it being generally advisable to rock the dish occasionally so as to allow fresh portions of the bath to have access to tne surface of the plate.

Mr. Edge showed a plate which was disfigured in a number of places with markings like short curved hairs, each about one-quarter of an inch long. The markings seemed to be in the gelatine film itself and not on the surface, and a member suggested their connection with the use of chrome alum in the emulsion.

Mr. Frederick E. Ives showed four negatives of the lime light spectrum made on plain and color-sensitive collodion emulsion plates. He stated that the spectrum was projected by means of an optical lan-

tern and flint glass prism, with a slit measuring one-fiftieth of an inch, and all plates received the same exposure and development.

The first negative was on a plain emulsion plate, which was practically insensitive to green, yellow, orange and red.

The second was on a chlorophyl plate, which was remarkably sensitive to all parts of the visible spectrum, and was more sensitive to red, orange and blue-green than to violet.

The third negative on an eosine plate showed sensitiveness to red and orange, but was more sensitive to yellow-green than to blue or violet.

The fourth plate prepared with both chlorophyl and eosine appeared to show the full action of both sensitizers, and there was no part of the lower half of the visible spectrum to which this plate was not more sensitive than to the violet.

There appeared a slight reduction of violet sensitiveness in the chlorophyl plate, and a corresponding increase of blue sensitiveness. The eosine and the chlorophyl-eosine appeared to be exactly as sensitive to violet as unstained plates.

Replying to questions asked, Mr. Ives stated that wet collodion emulsion plates were a great many times less sensitive than the rapid gelatine dry plates, and even required three to ten times more exposure than ordinary collodion bath plates, but could be made so sensitive to red and yellow that they required less exposure through a color-screen than the most rapid ordinary gelatine dry plates.

He had tried Carbutt's color-sensitive gelatine dry plates, and thought they were very good indeed, but not yet sufficiently sensitive to red to be satisfactory for some subjects.

The collodion-emulsion chlorophyl plates as prepared by Mr. Ives, would always bring out detail in all the colors, even when no color-screen was used; but in day light it was necessary to use a color-screen to secure correct color-tone. Color-sensitive gelatine dry plates appeared to show no practical advantage over the ordinary plates for use without the color-screen.

A perfect color-screen could be used either between the sensitive plate and lens, inside the lens mount, or in front of the lens; but if the glass of the color-screen was not of perfectly uniform density and thickness, it would be necessary to place it near the sensitive plate. His lenses for out-door work had color-screens fitted in between the diaphragm and back lens, where they occupied the least possible space.

He believed color-sensitive plates would be extensively used. He had made some photographs of difficult oil paintings and similar subjects, which could be made good only on plates remarkably sensitive to red, but there were many subjects that would come almost, if not quite, as good on the orange and yellow sensitive gelatine dry plates now in the market.

Some further discussion of the subject followed, in all of which those present evinced great appreciation of the interesting manner in which this valuable improvement had been illustrated by Mr. Ives.

Adjourned.

ROBERT S. REDFIELD,
Secretary.

OUR ILLUSTRATION.

We have the pleasure of giving this month a series of artistic portraits from the studio of Mr. Edwin Draper, of Philadelphia.

The selection has been made not so much for the interest in the subjects themselves, though many of them are interesting as pictures, but because of their importance as character studies.

The human face is not one constant thing as people generally imagine, nor does it for any one moment remain the same. The play of lights and shadows is infinite, and the artist must be able to comprehend the whole as one truth, and must be possessed of judgment and taste to seize that moment of time when the shifting muscles have marshalled themselves to produce the character exprssion of the sitter.

It is the easiest thing in the world to photograph a face, just as easy as taking a fence or a stone wall, if we have no regard to expression.

Any one can make something which shall

look more like the man or woman it is intended for than it does anybody else, but to produce an artistic photographic portrait calls for the exercise of much artistic feeling. He then is the best portrait photographer who can put the greatest amount of expression in his work, the power to do which can be acquired only by patient study.

OUR Journal goes forth this month in a new cover. For the neat and appropriate design we are indebted to the artistic taste of Mr. Xanthus Smith, whose excellent papers on the relation of art to photography our readers are familiar with.

Inasmuch as our name is the American Journal of Photography, prompted by a feeling of national pride, we have chosen as a vignette the portrait of Dr. John W. Draper in preference to that of Daguerre, Niepce, or any of the renowned Englishmen who so early and zealously labored in the field of photography.

Dr. Draper, though an Englishman by birth, is by adoption our own, and as far as a great mind can be limited, is in sentiment and feeling a genuine American.

He is one of the most thorough and original scientific men which the present age has produced; one of the most careful and patient experimenters; one of the most fertile investigators in the comparatively new domain of photo-chemistry.

He is in reality one of the founders of the science. He worked early in the difficult field, and prepared the way for those brilliant discoveries recently made in spectrum analysis. He discovered the means of photographing the fixed lines in the spectrum, and showed that others existed beyond the violet end.

He invented the first instrument to measure the actinic intensity of the different rays of the spectrum, and established by beautiful experiments the chemical action of light.

He has the honor of being the first man who took a portrait by the agency of light upon a sensitive surface (1839.)

He also took the first photograph of the moon.

One of his earliest scientific publications was on the action of light in bringing about the decomposition of carbonic acid in the leaves of plants.

He found, contrary to the supposition, that the yellow rays, instead of the violet, effected the decomposition, and were therefore essential to the formation of woody fibre.

The experiment was a most delicate operation, and called forth the appreciation of scientific men all over the world.

Dr. Draper was the first to prove that rays of all wave lengths are capable of producing chemical changes, and many of the deductions concerning the chemical action of light in the different parts of the spectrum on various substances, are in the same direction and form the basis on which recent discoveries in orthochromatic photography have been built.

It would be out of place here to speak of all the important scientific discoveries of Dr. Draper, or of his various literary works, but enough has been mentioned to show the great value of his labors in the heliographic art, and we have therefore ventured to add our little meed of honor to his distinguished name.

The portrait is a reproduction from a mezzotint engraving by Mr. John Sartain, of this city, taken from a daguerreotype by Marcus A. Root.

THE gentlemen to whom the management of the Convention has been entrusted have labored zealously to make the event a grand success, and the kind citizens of St. Louis, and all who have charge of the social entertainment of visitors, have secured every convenience to make the stay in their beautiful city most enjoyable.

Do not disappoint them by staying at home, or rather do not do injury to yourselves by neglecting such an opportunity of gaining so much.

E. H. writes: that having encountered a persistent attack of fog in the development of a brand of rapid plates in which he had hitherto had great faith by reason of their freedom from the disposition, he was inclined, as usual, to blame the maker for using impure chemicals in the emulsion, but a fair investigation of the trouble revealed the fact that the ruby fabric which

was used to exclude the actinic rays, had in process of time faded in certain spots, probably from solutions splashing upon it, therefore allowing the entrance of light sufficient to injure a rapid plate.

A new covering of ruby cloth, and one of yellow in addition, corrected the evil, and reinstated the plates in his favor.

THE mania for instantaneous photographs can hardly be regarded as favorable to artistic culture in photography.

It is true, many a beautiful view of the sea is secured with a quick exposure, but the votaries of the hobby seldom care for the art value of what they produce, the more abnormal they are the better are they pleased. They delight to catch nature unawares. One of these knights of the shutter, when asked concerning his experience in landscape work, seemed indignant that we should suppose him guilty of prostituting the wonderful properties of the gelatine plate to such trivial things as views or portraits.

Many of the instantaneous pictures of crowds and processions which we have seen are taken from too high a point of view. The object, we suppose, is to escape the heads of people in the foreground. They would, however, be greatly improved if taken at a lower level.

Another mistake is to use a short focus lens.

PHOTOGRAPHS of waterfalls are seldom effective. The idea of motion seems somehow or other lost, and we think that rapid plates and quick exposures have much to do with the dissatisfaction. A little more exposure than is usually given would in reality express better the idea of motion. Falling water, though quick in movement, is continually repeating itself, and passing constantly over the same places, so that the impression in reality remains the same. The most beautiful rendering of a waterfall which we remember seeing was shown by Mr. Gibson, of England, at the Philadelphia Society's Exhibition last year, entitled "At the Foot of the Tinkling Fall." We fancy, but may be mistaken, that a little more time was given it than is generally accorded waterfalls. The detail in the surroundings arguing in the direction of time.

Report of Railroad Committee of St. Louis Convention.

All the roads coming into St. Louis from the East have agreed to make a rate of a a fare and a third. Going to St. Louis one regular fare must be paid, and on the return by presenting a certificate at the depot a return fare can be bought for one-third. These are the very best terms that could be obtained.

The same rates have been made by the Chicago & Alton, the Missouri Pacific and the Wabash from the west of the river.

From Chicago the three roads make a rate of a round trip for a single fare—the Illinois Central, the Wabash and the Chicago & Alton.

The Illinois Central Railroad will also sell to all photographers along their lines in the northwest of Chicago a ronnd trip ticket at a single fare.

Those who wish to purchase the round trip ticket at a single fare will have to procure a voucher from the Committee on Railroads, C. Gentile, 229 State street, Chicago. Those who come over the Illinois Central can stop over in Chicago.

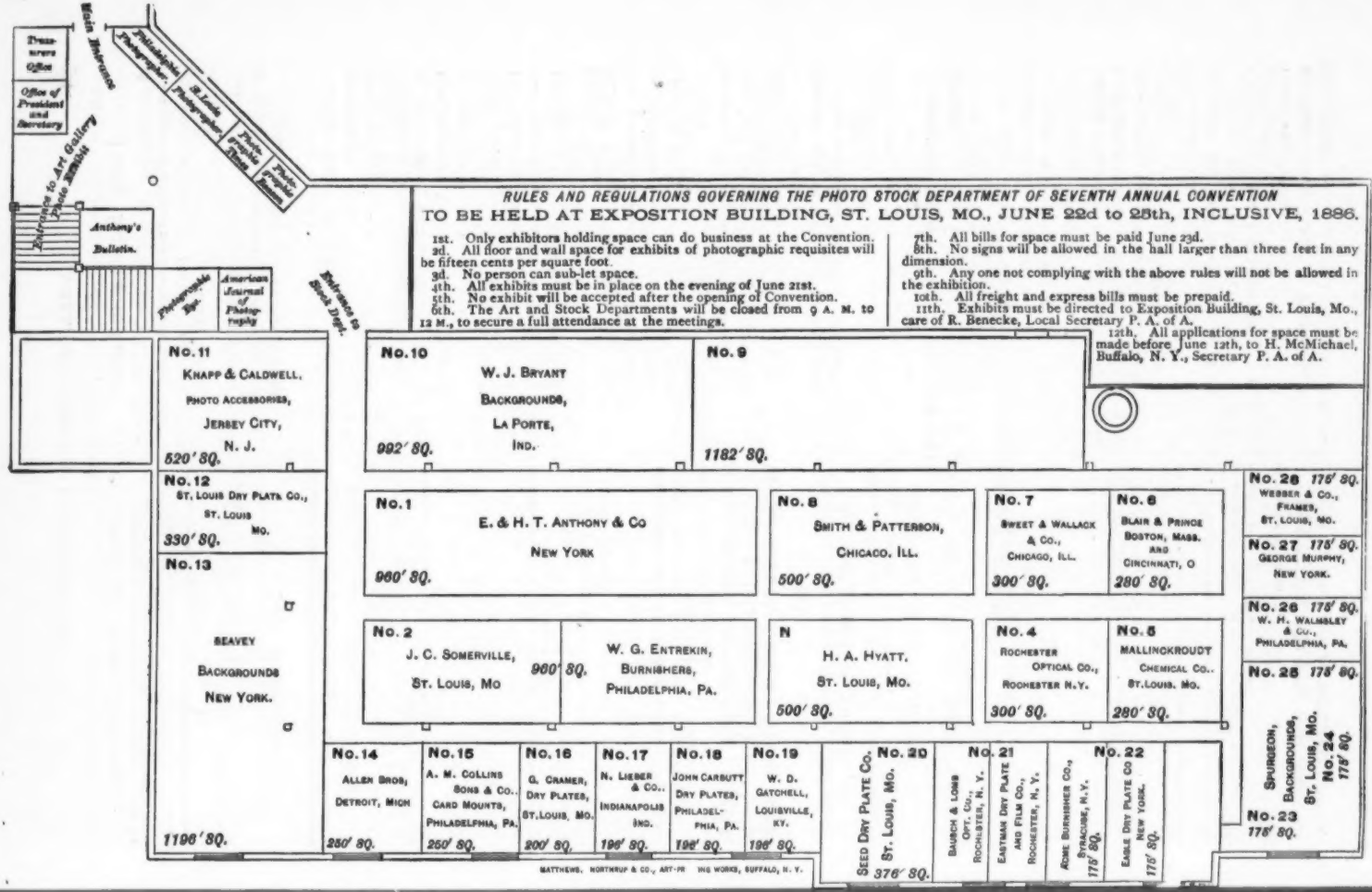
Photographers from Michigan should come by way of Chicago. The Michigan Central and other roads sell tickets for a fare and a third.

In St. Louis photographers will find street cars that take them near most of the hotels, by making inquiry.

G. GENTILE, Committee on R. R.

WE have received copies of the *American Druggist*, a most ably conducted journal, devoted to Pharmacy, Chemistry and Materia Medica.

The original articles are well written and upon topics of practical interest and value. The translations from foreign journals are important, and the amount of information and pleasant reading matter, combined with the illustrations, will make the *American Druggist* a welcome visitor to us.



RULES AND REGULATIONS GOVERNING THE PHOTO STOCK DEPARTMENT OF SEVENTH ANNUAL CONVENTION

TO BE HELD AT EXPOSITION BUILDING, ST. LOUIS, MO., JUNE 22d to 25th, INCLUSIVE, 1886.

1st. Only exhibitors holding space can do business at the Convention.
2d. All floor and wall space for exhibits of photographic requisites will be fifteen cents per square foot.
3d. No person can sub-let space.
4th. All exhibits must be in place on the evening of June 21st.
5th. No exhibit will be accepted after the opening of Convention.
6th. The Art and Stock Departments will be closed from 9 A. M. to 12 M., to secure a full attendance at the meetings.
7th. All bills for space must be paid June 23d.
8th. No signs will be allowed in the hall larger than three feet in any dimension.
9th. Any one not complying with the above rules will not be allowed in the exhibition.
10th. All freight and express bills must be prepaid.
11th. Exhibits must be directed to Exposition Building, St. Louis, Mo., care of R. Benecke, Local Secretary P. A. of A.
12th. All applications for space must be made before June 12th, to H. McMichael, Buffalo, N. Y., Secretary P. A. of A.

June Bargain List.

Accessories:

1—Papier Mache, Fire Place and Cabinet combined, fair condition, . . 8 00
1—Papier Mache Pedestals and Bases, good order, each 3 50
1—Papier Mache Wainscoting, fair order, 3 50
1—Universal Position Chair, Crimson Terry; all Attachments except Baby Chair; good as new 30 00
1—Spencer Head-rest 11 00
1—Floor Rug, 8x8 feet 10 00
1—Drapery 4 00
1—Drapery 6 00
1—Stone Wall 2 50
1—Rustic Stile in good condition. Price, new, $8.00, will sell for 4 00
1—Centennial Camera Stand, in good condition 11 00
2—Tall Head Rests, price each 2 00
1—Papier Mache Log, 2 feet long . . . 2 00
1—Papier Mache Rock, 45 in. high . . 7 00
1—Papier Mache Balustrade 7 00
1—8x10 Osborne Interior, "new," light left of subject $17.00

Camera Boxes.

1—5x8 Tourist Outfit, including 5x8 Tourist Camera Box, 2 Daisy Plate Holders, 1 Extension Tripod, and 1 Canvas Carrying Case, very little used. Price, new, $40.50, will sell for 30 00
1—4x7½ Stereo Box (wet plate) and Plate Holder, fitted with a matched pair Zantmeyer Lenses 30 00
1—6½x8½ Portrait Box and Plate Holder, fair condition 6 00
1—8x10 American Optical Co.'s Camera Box and Plate Holder, in good condition 12 00
1—5x8 A Q Co. first quality box, 4 double holders, carrying case tripod.
1 5x6 Dallmyer R R Lense, used very little, good as new 68 00

Lenses.

1—4x4 Darlot Portrait Lens, with Rack and Pinion Movement and Central Stops. Very little used. 25 00
1—4x4 C. C. Harrison Portrait Lens, with Rack and Pinion Movement. No Central Stops. 25 00
1—5x8 Waterbury Lens 2 50
1—13x16 Harrison Globe Lens W. . . . 20 00
1—1-4 Size Darlot Gem Lens 3 00
1—11x14 C. C. Harrison, Central Stops. 35 00
1—Matched Pair Ross Symetrical Stereo Lens, 4½ in. focus. By using back combination only will cover 5 x 8 plate full; will be sold singly or in pair. Price each, $25, per pair . . 45 00
1—8x10 Ross Rapid Symmetrical . . . 55 00
1—Finder 2 25
1—6½x8½ Walmsley Lense 36 00
1—Prohs Shutter No. 2, Pneumatic release 10 00
1—Matched pair German Stereoscopic Lenses, in good order. 15 00
1—Matched Pair, Imitation Dallmyer Lenses, per pair. 12 00

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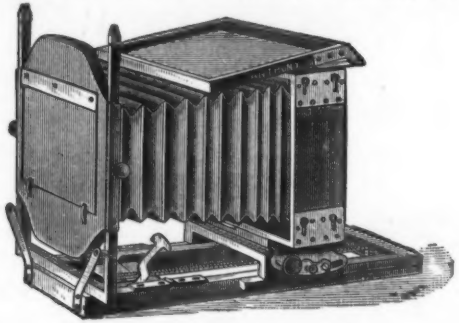

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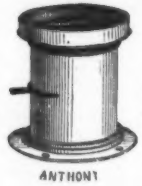
Nothing  Compares

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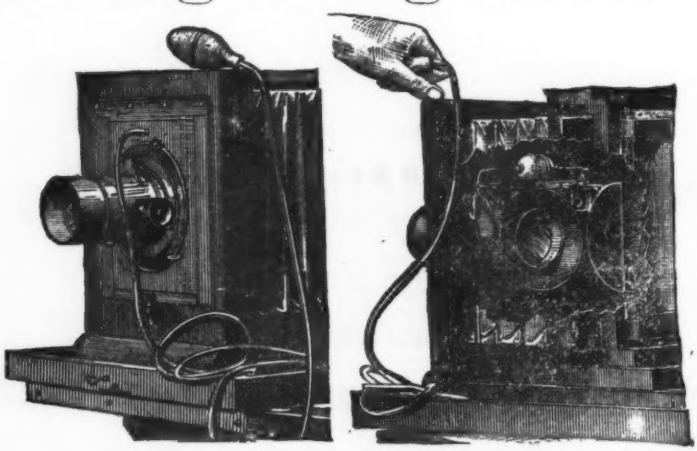

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